

WHAT IS CLAIMED IS:

1           1. A method of controlling the operation of a vehicle with a radio  
2 communications circuit configured to communicate with a vehicle operator's handheld  
3 radio frequency transponder, the method comprising the steps of:  
4           a. providing the vehicle having the bi-directional radio  
5 communications circuit;  
6           b. providing the radio transponder to the vehicle operator;  
7           c. generating electromagnetic radiation from the radio  
8 communications circuit;  
9           d. bringing the transponder within the range of the  
10 electromagnetic radiation;  
11           e. energizing the transponder by the electromagnetic radiation;  
12 transmitting first information from the transponder after the step of energizing the  
13 transponder;  
14           f. receiving at the reader circuit the first information transmitted  
15 by the transponder; and  
16           g. controlling at least one subsystem of the vehicle in response to  
17 the first information received at the transponder.

1           2. The method of Claim 1, wherein the step of providing the radio  
2 transponder includes the step of providing the radio transponder with a low-power  
3 microcontroller configured to receive its operating power from the electromagnetic  
4 radiation.

1           3. The method of Claim 2, wherein the step of providing the radio  
2 transponder includes the step of molding the radio transponder into a vehicle ignition  
3 key.

1           4. The method of Claim 2, wherein the step of providing a radio  
2 transponder includes the step of embedding the radio transponder in a hand-held card.

1           5.     The method of Claim 4, wherein the step of providing a radio  
2 transponder includes the step of mechanically bonding the radio transponder to a  
3 vehicle ignition key.

1           6.     The method of Claim 1, wherein the step of transmitting the first  
2 information includes the step of transmitting a digital value that identifies the  
3 operator.

1           7.     The method of Claim 6, wherein the step of controlling at least one  
2 subsystem includes the step of comparing the digital value that identifies the operator  
3 with a value previously stored in the vehicle's controller.

1           8.     The method of Claim 7, wherein the step of controlling at least one  
2 subsystem of the vehicle includes the step of disabling the operation of one or more of  
3 the following subsystems:

- 4           a.     a fuel pump of the vehicle;
- 5           b.     a hydraulic system of the vehicle;
- 6           c.     a starting system of the vehicle;
- 7           d.     an electrical system of the vehicle;
- 8           e.     a transmission of the vehicle; and
- 9           f.     an engine of the vehicle.

1           9.     A method of controlling the operation of a vehicle in response to data  
2 received from a radio transponder, the vehicle having a short-range radio transceiver  
3 configured to selectively energize the transponder when it is in close proximity to an  
4 operator's station of the vehicle, the method including the steps of:

- 5           a.     storing data in the transponder indicative of the operator;
- 6           b.     bringing the transponder into close proximity of the operator's  
7 station of the vehicle;
- 8           c.     generating by the vehicle of an electromagnetic field sufficient  
9 to energize the transponder;
- 10          d.     downloading from the transponder to the vehicle the data  
11 indicative of the operator;

- e. comparing by the vehicle of the downloaded data indicative of the operator with data previously stored in the vehicle; and
- f. limiting the functionality of the vehicle based upon the step of comparing.

10. The method of Claim 9, wherein the data indicative of the operator  
includes data indicative of the vehicle operational parameters.

11. The method of Claim 10, wherein the operational parameters include a  
distance traveled.

1           12. The method of Claim 10, wherein the operational parameters include a  
2 geographical area in which the vehicle may be driven.

1           13. The method of Claim 10, wherein the operational parameters includes  
2 times of the day during which operation is permitted.

1                  14. The method of Claim 10, wherein the operational parameters include  
2 an elapsed time of operation.

15. The method of Claim 10, wherein the operational parameters include a  
maximum engine load.

1           16. The method of Claim 10, wherein the operational parameters include a  
2 maximum speed of the vehicle.

1           17. A system for controlling the operation of a vehicle comprising:  
2               a. a portable radio transponder including a microcontroller and an  
3 digital memory, wherein the digital memory includes data indicative of an operator of  
4 a vehicle;

- b. a vehicle further comprising:
  - i. a transponder reader circuit configured to transmit electromagnetic radiation sufficient to energize an

enable the transponder to transmit the data at a  
transponder radio frequency; and

ii. a control system configured to input the data from the  
transponder reader circuit and to control operation of  
the vehicle in response to the data.

1           18. The system for controlling the operation of a vehicle of Claim 17,  
2       wherein the control system is configured to set a vehicle speed limit based upon the  
3       data received from the transponder.

1           19. The system for controlling the operation of a vehicle of Claim 17,  
2       wherein the control system is configured to set a maximum engine RPM based upon  
3       the data received from the transponder.

1           20. The system for controlling the operation of a vehicle of Claim 17,  
2       wherein the control system is configured to set a maximum engine load based upon  
3       the data received from the transponder.

1           21. The system for controlling the operation of a vehicle of Claim 17,  
2 wherein the control system is configured to disable the vehicle after a predetermined  
3 amount of time of operation based upon the data received from the transponder.

1           22. The system for controlling the operation of a vehicle of Claim 17,  
2       wherein the control system is configured to disable the vehicle if it travels outside a  
3       predetermined geographical area of operation.

1           23. The system for controlling the operation of a vehicle wherein the  
2 control system is configured to prevent the operation of the vehicle outside of  
3 predetermined time intervals each day based upon the data received from the  
4 transponder